ISFNF 2024

International Symposium on Fish Nutrition and Feeding

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INTERNATIONAL AQUA FEED
INCORPORATING FISH FARMING TECHNOLOGY

Monday May 27

ISFNF 2024
International Symposium on Fish Nutrition and Feeding

09:00 - 14:00 **REGISTRATION AND POSTER SET UP**

14:00 - 18:00 **REGISTRATION AND POSTER SET UP**

18:00 - 19:00 **POSTER SESSION 1**

20:00 - 22:00 **WELCOME RECEPTION**

Tuesday May 28

ISFNF 2024
International Symposium on Fish Nutrition and Feeding

08:20 - 08:50 **OPENING CEREMONY**
09:00 - 09:30 **KEYNOTE LECTURE 1:**
PROTEIN AND OIL SOURCES FROM CIRCULAR ECONOMY. Valente L. 2

09:40 - 11:20
SESSION 1. PROTEIN SOURCES
Chairs: Maria Teresa Viana and Margareth Øverland

09:40 A SELECTIVELY BRED HIPRO SOYA WITH REDUCED ANTINUTRIENTS AND INCREASED PROTEIN CONTENT IMPROVES PERFORMANCE OF ATLANTIC SALMON (*Salmo salar*). Zatti KM. 3

10:00 BEYOND NUTRITIONAL VALUE: MYCOPROTEIN *Paecilomyces variotii* IMPROVES GROWTH PERFORMANCE AND OVERALL HEALTH IN ATLANTIC SALMON (*Salmo salar*). Mensah DD. 4

10:20 NOVEL MICROBIAL PROTEIN SOURCES PRODUCED FROM FOREST SIDE STREAMS SUPPORT HIGH GROWTH PERFORMANCE, HEALTH, AND PRODUCT QUALITY OF ATLANTIC SALMON. Øverland M. 5

10:40 USE OF BLACK SOLDIER FLY LARVAE BY-PRODUCTS IN TILAPIA AND CATFISH NUTRITION. Romano NR. 6

11:00 ALTERNATIVE SALMON FEEDS DESIGNED FOR RECIRCULATING AQUACULTURE SYSTEMS USING REGENERATIVE NUTRITIONAL FEEDSTUFFS SOURCED FROM THE LOCAL CIRCULAR BIOECONOMY IN NOVA SCOTIA, CANADA. Colombo SM. 7

11:20 - 12:00 **Coffee Break**

12:00 - 14:00
SESSION 2. PROTEIN SOURCES
Chairs: Juan Pablo Lazo and Alberto Nunes

12:00 THE EFFECTS OF DIFFERENT SOYBEAN PROTEIN SOURCES ON GROWTH PERFORMANCE, FEED UTILIZATION EFFICIENCY, INTESTINE HISTOLOGY, AND GENE EXPRESSION OF PACIFIC WHITE SHRIMP (*Litopenaeus vannamei*). Davis DA. 8

12:20 FEEDING THE GILTHEAD SEA BREAM OF THE FUTURE: TOWARDS SUSTAINABLE AQUAFEEDS WITH SINGLE CELL PROTEINS. Bonaldo A. 9

12:40 KRILL MEAL REDUCES SEA LICE INFESTATION AND ENHANCES SKIN MUCOSAL HEALTH IN ATLANTIC SALMON. Kaur K. 10

13:00 THE NOVEL RAW MATERIAL *Calanus finmarchicus* IS A SOURCE OF PROTEIN PRODUCTS FOR WHITELEG SHRIMP (*Litopenaeus vannamei*). Abrahamsen H. 11

13:20 *Paecilomyces variotii* (PEKILO®) IN NOVEL FEEDS FOR ATLANTIC SALMON: EFFECTS ON PELLET QUALITY, GROWTH PERFORMANCE, GUT HEALTH, AND NUTRIENT DIGESTIBILITY AND UTILIZATION. Hooft JM. 12

13:40 DEVELOPMENT OF NON-FISH MEAL/NON-FISH OIL DIET FOR YELLOWTAIL *Seriola quinqueradiata* WITH MICRO ALGAE AND FEED STIMULANTS. Satoh S. 13

14:00 - 15:20 **LUNCH**

Tuesday May 28

15:20 - 17:20

SESSION 3. LIPID SOURCES

Chairs: Mayra González-Félix and Brett Glencross

15:20 THE EFFECT OF USING A NEREID POLYCHAETE AS AN ALTERNATIVE PROTEIN AND LIPID SOURCE IN DIETS FOR RED SEABREAM *Pagrus major*. Kabeya N. 14

15:40 ASSESSING THE STRUCTURAL COMPOSITION OF LIPIDS WITHIN ALTERNATIVE OILS: ARE LIPIDS MORE THAN JUST THE SUM OF THEIR FATTY ACIDS? Broughton R. 15

16:00 EFFECT OF DIFFERENT LEVELS OF DOCOSAHEXAENOIC ACID IN DIETS FOR MARKET SIZE OF ASIAN SEABASS *Lates calcarifer*, AND PERSISTENCE OF DHA IN BLOOD AND FLESH. Haga Y. 16

16:20 EFFECTS OF VARYING EPA/DHA RATIOS AND TOTAL EPA+DHA INCORPORATION IN SEA BASS AND SEA BREAM DIETS THROUGH ALGAL DHA SUPPLEMENTATION. Karalazos V. 17

16:40 INCLUSION OF EPA AND DHA-RICH OIL FROM TRANSGENIC *Camelina sativa* IN FEED FOR ATLANTIC SALMON (*Salmo salar*) GROWN TO MARKET SIZE IN SEAWATER PENS. Betancor MB. 18

17:00 REPLACEMENT OF FISH OIL BY A HIGH-DHA MICROBIAL OIL IN SALMON DIETS: EFFECT ON LIPID MOLECULAR SPECIES AND GENE EXPRESSION. Parrish CC. 19

18:00 - 19:00 **POSTER SESSION 2**

Wednesday May 29

09:00 - 09:30 **KEYNOTE LECTURE 2:**

OPTIMIZING FISH DIETS: A COMPREHENSIVE REVIEW OF NUTRITIONAL REQUIREMENTS. Oliva-Teles A. 20

09:40 - 11:20

SESSION 4. NUTRIENTS AND FUNCTIONALITY

Chairs: Ruth Montero and Shuichi Satoh

09:40 A METHIONINE AS A NUTRACEUTICAL INGREDIENT FOR THE EUROPEAN SEABASS. Machado M. 21

10:00 FROM IMMUNE TO NEUROENDOCRINE MODULATION - AN INTEGRATIVE VIEW OF TRYPTOPHAN AS A FEED ADDITIVE TO PROMOTE FISH WELFARE. Azeredo R. 22

10:20 METABOLIC RESPONSES OF YELLOW PERCH (*Perca flavescens*) TO DIETARY CARBOHYDRATE SOURCES AND LEVELS. Deng DF. 23

10:40 EFFECT OF CARBOHYDRATE TYPE (DEXTRIN, RAW STARCH, AND GELATINIZED STARCH) ON GROWTH, FEED EFFICIENCY, GLYCEMIC RESPONSE, AND DIGESTIVE CAPACITY OF *Morone saxatilis* CULTURED AT TWO TEMPERATURES IN SEAWATER. Garnica-Gómez LA. 24

11:00 THE DEVELOPMENT OF FEEDING BEHAVIOR, APPETITE AND SATIETY REGULATION IN GILTHEAD SEABREAM (*Sparus aurata*) LARVAE. Bitan A. 25

11:20 - 12:00 **Coffee Break**

Wednesday May 29

12:00 - 14:00

SESSION 5. COMPARATIVE NUTRITION

Chairs: Artur Rombenso and Aires Oliva-Teles

12:00 COMPARATIVE STUDY OF N-3 PUFA UTILIZATION IN RAINBOW TROUT AND ATLANTIC SALMON. Bou M. 26

12:20 OPTIMUM VITAMIN NUTRITION AND CALCIFEDIOL IMPROVE PERFORMANCE OF WHITELEG SHRIMP (*Litopenaeus vannamei*) AND RAINBOW TROUT (*Oncorhynchus mykiss*). Liu A. 27

12:40 USING FACTORIAL MODELS AND THE IDEAL PROTEIN CONCEPT TO DESIGN CRUSTACEAN FORMULATED FEEDS. Yeap A. 28

13:00 UNDERSTANDING FEED TYPES, INTAKE AND FEEDING BEHAVIOUR IN FEMALE BROODSTOCK *Penaeus monodon*: EFFECTS ON GROWTH, TISSUE COMPOSITION AND METABOLOMICS, AND REPRODUCTIVE PERFORMANCE. Rombenso A. 29

13:20 DIFFERENT RATIOS OF DIGESTIBLE MACRONUTRIENTS AFFECTED PERFORMANCE DIFFERENTLY IN RAINBOW TROUT AT OPTIMAL CONDITIONS. Sixten HJ. 30

13:40 LYSO-PHOSPHOLIPID SUPPLEMENTATION AS STRATEGY TO REPLACE LECITHIN AND REDUCE COST OF SHRIMP FEEDS. Nuez-Ortín WG. 31

14:00 - 15:20 **LUNCH**

15:20 - 17:20

SESSION 6. ENVIRONMENT AND NUTRITION

Chairs: Martin Perez-Velazquez and Naoki Kabeya

15:20 IMPACTS OF MACRONUTRIENT COMPOSITION ON ATLANTIC SALMON AT HIGH TEMPERATURES. Simon C. 32

15:40 EFFECT OF DIETARY TAURINE, CHOLESTEROL AND CHOLIC ACID ON ASTAXANTHIN DIGESTIBILITY AND DEPOSITION IN ATLANTIC SALMON (*Salmo salar*) REARED AT ELEVATED TEMPERATURE. Courtot E. 33

16:00 UNDERSTANDING THE IMPACTS OF THERMAL STRESS IN SALMON TISSUES USING PROTEOMICS AND METABOLOMICS. Mendoza-Porras O. 34

16:20 TRANSCRIPTOMICS REVEALS THE BIOLOGICAL MECHANISMS UNDERLYING THE IMPACT OF TRYPTOPHAN SUPPLEMENTATION IN FISH UNDER STRESSFUL CONDITIONS. Peixoto D. 35

16:40 COMPENSATORY GROWTH IN PACIFIC WHITE SHRIMP (*Penaeus vannamei*): FEEDING STRATEGIES, OXIDATIVE STRESS AND REARING IMPROVEMENT. Py C. 36

17:00 NILE TILAPIA JUVENILES REARED AT COLD SUBOPTIMAL WATER TEMPERATURES DO NOT BENEFIT FROM DIETARY SUPPLEMENTATION WITH CHOLESTEROL. Fracalossi DM. 37

18:00 - 19:00 **POSTER SESSION 3**

Thursday May 30

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09:00 - 09:30 **KEYNOTE LECTURE 3**
A COMPLEX NEW WORLD FOR INGREDIETS IN AQUACULTURE. Manomaitis L. 38

09:40 -11:20
SESSION 7. HEALTH
Chairs: Delbert M. Gatlin and Stefanie Colombo

09:40 FUCOIDAN FROM SUGAR KELP TO COORDINATE THE IMMUNE RESPONSE AND INTESTINAL MICROBIOTA IN ATLANTIC SALMON BY NUTRITIONAL PROGRAMMING. Rocha S. 39

10:00 OXYTETRACYCLINE DOSE REDUCTION IN SALMON FARMING: ASSESSING A MICRO ENCAPSULATED NOVEL FORMULATION IN AN IN VIVO MODEL. Wacyk J. 40

10:20 THE EFFECTS OF GLYCINE SUPPLEMENTATION IN SOYBEAN-MEAL-BASED DIETS AS A FUNCTIONAL AMINO ACID FOR JUVENILE HYBRID STRIPED BASS (*Morone chrysops* x *M. saxatilis*). Suehs BA. 41

10:40 IMPACT OF NOVEL OMEGA-3 LONG-CHAIN POLYUNSATURATED FATTY ACIDS-RICH OILS ON ATLANTIC SALMON, *Salmo salar*, HEALTH: SEA-LICE CHALLENGE. Salah AS. 42

11:00 A NOVEL SOLUTION TO COMBAT *Piscirickettsia salmonsis*, THE CAUSATIVE AGENT OF SALMON RICKETTSIAL SEPTICAEMIA (SRS). Standen B. 43

11:20 -12:00 **Coffee Break**

12:00 - 14:00
SESSION 8. NUTRITIONAL FRONTIERS
Chairs: Débora Machado Fracalossi and Monica Betancor

12:00 THE DEVELOPMENT OF METHODOLOGICAL APPROACHES AND DIGITAL TOOLS ENABLING EFFECTIVE ASSESSMENT OF FEED QUALITY AND THE EFFECTIVENESS NUTRITIONAL SOLUTIONS UNDER FIELD CONDITIONS. Bureau DP. 44

12:20 A RAINBOW TROUT (*Oncorhynchus mykiss*) ARTIFICIAL INTESTINE PLATFORM TO DISCRIMINATE BETWEEN CONTRASTING DIETS. Chacon MA. 45

12:40 OPTIMISING THE INCLUSION OF PROTEIN SOURCES IN DIETS FOR *Penaeus vannamei* USING A GEOMETRIC FRAMEWORK. Truong HH. 46

13:00 MACHINE LEARNING MODELS FOR REAL-TIME DISSOLVE OXYGEN AND TEMPERATURE PREDICTION IN FISH PONDS. Alaa J. 47

13:20 A NOVEL FEEDING STRATEGY BASED ON MUSCLE FIBER RECRUITMENT TO MAXIMIZE THE PERFORMANCE OF RAINBOW TROUT. Kumar V. 48

13:40 CARBON FOOTPRINT OF SALMON FEED: EFFECTS OF INCLUDING ALGAE. Jafarzadeh S. 49

Friday May 31

09:00 - 09:30 **KEYNOTE LECTURE 4**
ECONOMIC AND SOCIETAL CHANGES THAT SHAPE OUR INDUSTRY; PAST, PRESENT AND FUTURE. Santigosa E. 50

09:40 - 11:20
SESSION 9. ADDITIVES
Chairs: Sergio Rocha and Dave Francis

09:40 POSITIVE EFFECT OF MARINE SYMBIOTICS SUPPLEMENTATION ON FISH INTESTINAL MICROBIOTA DYSBIOSIS INDUCED BY ANTIBIOTIC TREATMENT. Giudicelli F. 51

10:00 FUCOIDAN FROM SUGAR KELP AS A FEED ADDITIVE TO IMPROVE TRAINED IMMUNITY-BASED VACCINE IN ATLANTIC SALMON AGAINST *Tenacibaculum maritimum*. Morales-Lange. 52

10:20 NUTRITIONAL STRATEGY COMBINING SATURATED LIPID SOURCES AND SUPPLEMENTATION WITH SPICES TO MITIGATE IMPACTS OF FISH OIL REDUCTION IN FISH FEEDS. Morais S. 53

10:40 IMMUNOMODULATORY EFFECTS OF LAMINARIN FROM *Laminaria hyperborea* ON ATLANTIC SALMON LEUKOCYTES- FIRST STEPS TOWARDS NOVEL FUNCTIONAL FEED APPLICATION FOR SALMON. Montero R. 54

11:00 ARE WE LEVERAGING THE FULL FUNCTIONALITY OF THE VITAMIN D SYSTEM? Rider S. 55

11:20 - 12:00 **Coffee Break**

12:00 - 14:00
SESSION 10. ADDITIVES
Chairs: Sofia Morais and Ha Truong

12:00 HOST-MICROBIOTA INTERACTIONS DRIVE THE PROBIOTICS ENRICHMENT IN THE MICROBIOTA OF *L. vannamei*: A HOLOGENOME PERSPECTIVE. Cornejo-Granados. 56

12:20 EFFECT OF DIETARY CHOLINE ON ENERGY FORTIFICATION IN ATLANTIC SALMON (*Salmo salar* L.). Yang BC. 57

12:40 MARINE INGREDIENTS AS ANTI-INFLAMMATORY FEED ADDITIVES: IN VITRO ASSESSMENT USING A CELL-BASED ASSAY AND IN VIVO RESULTS USING *Aurantiochytrium* sp. MEAL. Hoffling FB. 58

13:00 OPTIMAL IMMUNE FUNCTION IN FISH REQUIRES OPTIMAL MICRONUTRIENT SUPPLY. Kortner TM. 59

13:20 VITAMIN AND MINERAL REQUIREMENTS FOR OPTIMAL DISEASE RESISTANCE. A REVIEW. Krogdahl A. 60

13:40 DIETARY SUPPLEMENTATION OF EXOGENOUS PROTEASES IMPROVES PROTEIN AND AMINO ACID DIGESTIBILITY AND GROWTH PERFORMANCE OF JUVENILE *Penaeus vannamei*. Nunes AJP. 61

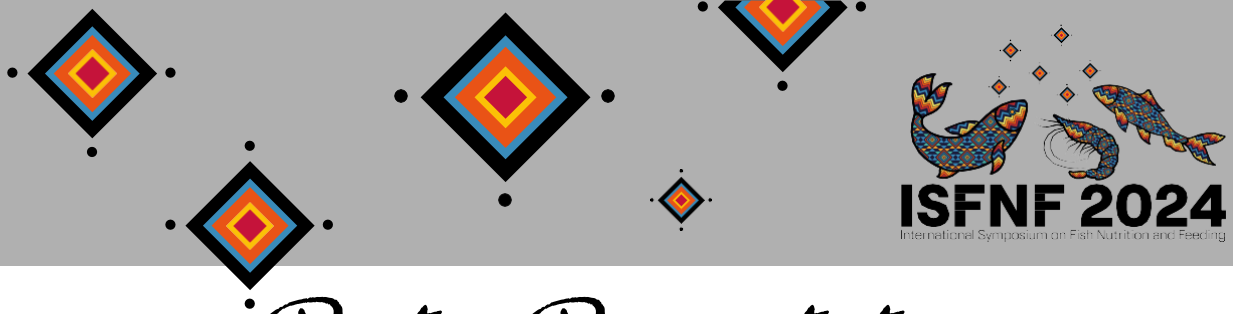
14:00 - 15:20 **LUNCH**

Friday May 31

15:20 - 17:20
SESSION 11. ADDITIVES
Chairs: Elizabeth Cruz-Suárez and Luisa Valente

17:20 - 18:00 **AWARDS AND CLOSING CEREMONY**

19:00 - 22:00 **SYMPOSIUM DINNER**



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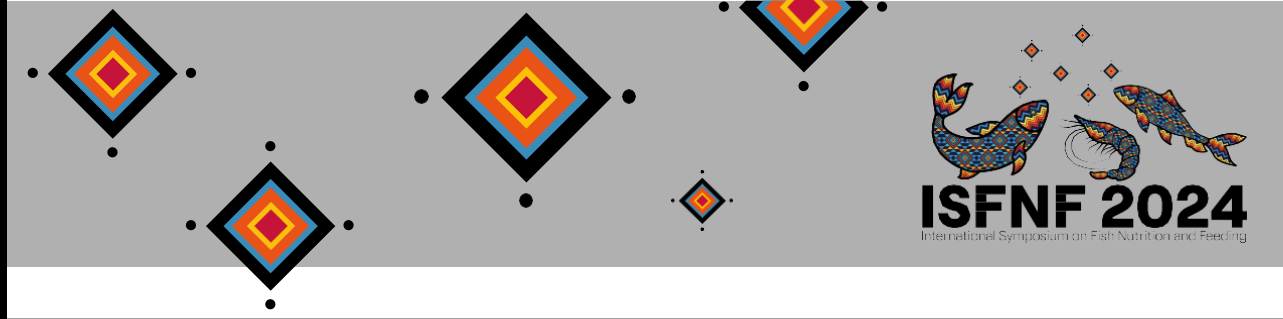

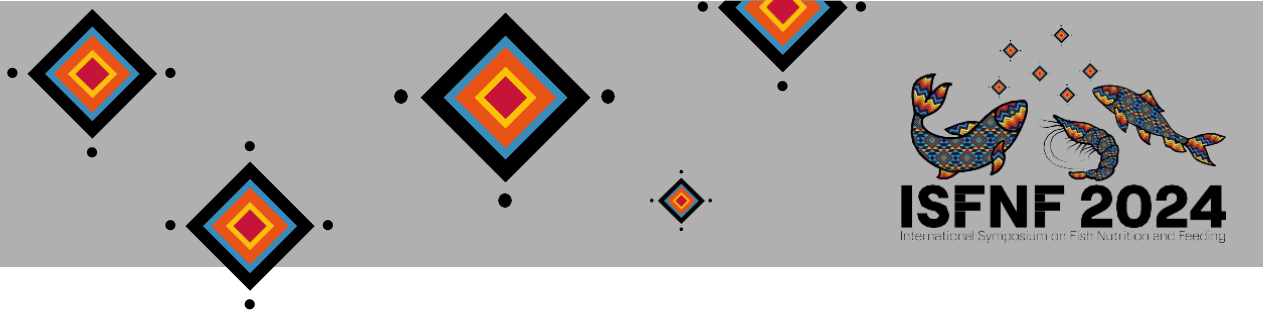

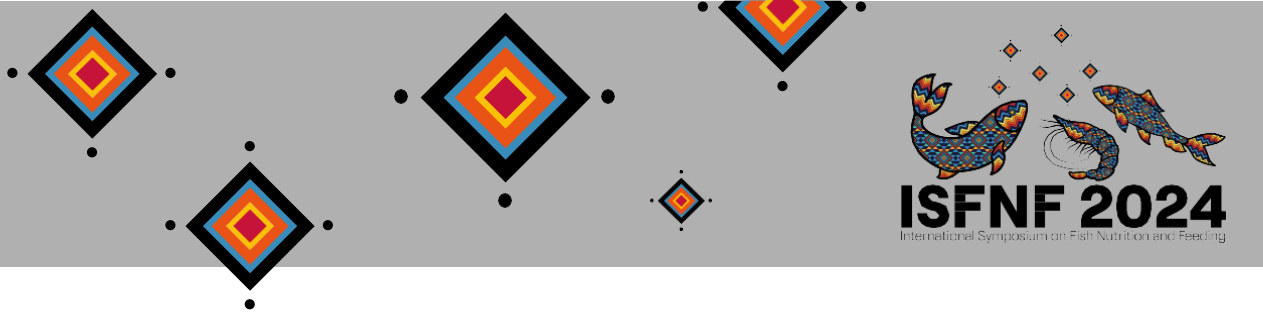

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Symposium Program

Time	Monday May 27	Tuesday May 28	Wednesday May 29	Thursday May 30	Friday May 31
		Ingredients Day	*Requirements Day*	*Health Day*	*Addltives Day*
08:00					
08:20		**Openning Ceremony**			
08:40		***Keynote 1 - Ingredients***	***Keynote 2 - Requirements***	***Keynote 3 - Applied***	***Keynote 4 - Additives***
09:00		**Luisa Valente**	**Aires Oiva-Teles**	**Lukas Manomaitis**	**Ester Santigosa**
		Protein Sources	***Nutrients and Functionality***	***Health***	***Additives***
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